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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/784,072   | 02/16/2001  | Karim El Malki       | 040000-682          | 4894             |
| 27045  | 7590        | 02/04/2005           | EXAMINER            |                  |
| ERICSSON INC.<br>6300 LEGACY DRIVE<br>M/S EVR C11<br>PLANO, TX 75024 |             |                      | KADING, JOSHUA A    |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2661                |                  |

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/784,072 | <b>Applicant(s)</b><br>MALKI ET AL. |  |
|                              | <b>Examiner</b><br>Joshua Kading     | <b>Art Unit</b><br>2661             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2004.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-17 and 19-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-13,17 and 19-29 is/are rejected.
- 7) ☒ Claim(s) 14-16 and 30-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

Claims 1, 14, and 30 are objected to because of the following informalities:

Claim 1, line 11 states, "the current address". This limitation lacks antecedent  
5 basis. Therefore, it is suggested "the current address" be changed to --a current  
address--.

Claim 14, lines 5-6 and claim 30, lines 4-5 state, "at least another one of the  
mobile node's current addresses". As per the telephone discussion on 25 January 2005,  
"at least another one of the mobile node's current addresses" should be changed to --at  
10 least another current address of the mobile node--.

Claim 14, line 11 states, "with the with the". There should only be on "with the" at  
line 11 of claim 14.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set  
20 forth in section 102 of this title, if the differences between the subject matter sought to be patented and  
the prior art are such that the subject matter as a whole would have been obvious at the time the  
invention was made to a person having ordinary skill in the art to which said subject matter pertains.  
Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being  
unpatentable over La Porta et al. (U.S. Patent 6,496,505 B2).

Regarding claim 1, La Porta discloses "a method for routing packets to a mobile node comprising the steps of: providing an address update, including a regional care-of-address associated with the mobile node, to a node communicating with the mobile node (col. 10, lines 1-11 where the "regional care-of-address" is inherently part of the mobile device's new IP address because as seen in figure 2, any root router such as 150, acts as applicant's "mobility anchor point" and as such all nodes (including mobiles) within the domain must have addresses based on the root router's address which is equivalent to applicant's "regional care-of-address" as read in the specification, page 9, lines 12-15 and thus, the "regional care-of-address" is provided for by way of becoming part of the root router's domain); sending packets, from the node communicating with the mobile node, to a node associated with the regional care-of-address (figure 2 and col. 10, lines 7-11 where data from the mobile's home domain is communicated from that root node to the mobile in the foreign domain); receiving packets at the node associated with the regional care-of-address (col. 10, lines 7-11); determining, at the node associated with the regional care-of-address, a current address of the mobile node (col. 10, lines 7-11); routing the received packets to a node associated with the current address of the mobile node (col. 10, lines 7-11); forwarding packets, from the node associated with the current address, to the mobile node (figure 2 and col. 10, lines 7-11 where routers similar to R4 and R5 in the foreign domain route packets to the current location of the mobile)."

However, La Porta does not explicitly disclose that his invention uses MIPv6. Although La Porta does not explicitly disclose the use of MIPv6 with his invention, he does strongly suggest that his invention is fully compatible with MIPv6 (col. 9, lines 11-15).

5           It would have been obvious to one with ordinary skill in the art at the time of invention to include the IPv6 for the purpose of increasing the number of available IP addresses available to assign to mobiles. The motivation being that the more IP addresses available, the more mobiles (customers) can use the network.

10           Regarding claim 17, La Porta discloses "a network comprising: a mobile node (figure 2, element 114); a node communicating with the mobile node, wherein the mobile node provides an address update, including a regional care-of-address associated with the mobile node, to the node communicating with the mobile node (col. 10, lines 1-11 where the "regional care-of-address" is inherently part of the mobile  
15   device's new IP address because as seen in figure 2, any root router such as 150, acts as applicant's "mobility anchor point" and as such all nodes (including mobiles) within the domain must have addresses based on the root router's address which is equivalent to applicant's "regional care-of-address" as read in the specification, page 9, lines 12-15 and thus, the "regional care-of-address" is provided for by way of becoming part of the  
20   root router's domain); a node associated with the regional care-of-address, wherein the node communicating with the mobile node sends packets to the node associated with the regional care-of-address (figure 2 and col. 10, lines 7-11 where data from the

mobile's home domain is communicated from that root node to the mobile in the foreign domain); a node associated with a current address of the mobile node, wherein the node associated with the current address of the mobile node receives packets from the node associated with the regional care-of-address of the mobile node and sends the  
5 received packets to the mobile node (figure 2, where routers similar to R4 and R5 in the foreign domain are associated with the current address of the mobile and route data to the mobile)."

However, La Porta does not explicitly disclose that his invention uses MIPv6. Although La Porta does not explicitly disclose the use of MIPv6 with his invention, he  
10 does strongly suggest that his invention is fully compatible with MIPv6 (col. 9, lines 11-15).

It would have been obvious to one with ordinary skill in the art at the time of invention to include the IPv6 for the purpose of increasing the number of available IP addresses available to assign to mobiles. The motivation being that the more IP  
15 addresses available, the more mobiles (customers) can use the network.

Regarding claims 3 and 19, La Porta discloses the method of claim 1 and the network of claim 17. Although La Porta does not explicitly disclose the MIPv6 compatibility, La Porta further discloses, "the node associated with the regional care-of-  
20 address implements mobility anchor point functionality (col. 10, lines 11-15 where as seen in figure 2, the root node of each domain functions as the mobility anchor point of that domain)." It would have been obvious to one with ordinary skill in the art at the time

of invention to include the mobility anchor point with the method of claim 1 and the network of claim 17 for the same reasons and motivation as in claims 1 and 17.

Regarding claims 4 and 20, La Porta discloses the method of claim 1 and the  
5 network of claim 17. Although La Porta does not explicitly disclose the MIPv6  
compatibility, La Porta further discloses, "the node associated with the current address  
is an access router (figure 2, elements similar to R4 and R5 of the foreign domain act as  
access routers because they give access to their respective mobiles)." It would have  
been obvious to one with ordinary skill in the art at the time of invention to include the  
10 access router with the method of claim 1 and the network of claim 17 for the same  
reasons and motivation as in claims 1 and 17.

Claims 5-10, 12, 13, 21-26, 28, and 29 are rejected under 35 U.S.C. 103(a) as  
being unpatentable over La Porta et al. in view of Khalil et al. (U.S. Patent 6,578,085  
15 B1).

Regarding claims 5 and 21, La Porta discloses the method of claim 1 and the  
network of claim 17. However, La Porta lacks what Khalil suggests, "receiving a  
message, from the node associated with the mobile node's current address, by the  
20 mobile node (col. 5, lines 66-col. 6, lines 1-16 where the mobile node maintains a list of  
correspondent nodes, and the mobile must have received this information from the  
associated node as per the hierarchical nature of the domain as seen in La Porta figure

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2), wherein the message indicates the availability of nodes which can be used as regional care-of-addresses for the mobile node (col. 5, lines 66-col. 6, lines 1-16 where the correspondent nodes are in the list because they are available, thus they indicate availability and again as per the hierarchical nature of the domains, the correspondent nodes inherently contain the regional care-of-address for their domain because all data to them must pass through their root nodes, which has the regional care-of-address, and thus, selecting an available correspondent node will select an available regional care-of-address)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the regional care-of-addresses message with the method of claim 1 and the network of claim 7 for the purpose of updating the bindings associated with each correspondent node. The motivation for this is faster communication, or route optimization.

Regarding claims 6 and 22, La Porta and Khalil disclose the method of claim 5 and the network of claim 21. However, Khalil lacks what La Porta further discloses, "the nodes which can be used as regional care-of-addresses for the mobile node have mobility anchor point functionality and wherein the message is a router advertisement containing a mobility anchor point option (col. 9, lines 49-59 where the DHCP function allows the routers (nodes) to have mobility anchor point functionality by allowing their addresses to act as the root node for each domain)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the mobility anchor point

functionality with the nodes associated with the regional care-of-addresses with the method of claim 5 and the network of claim 21 for the same reasons and motivation as in claims 1 and 17.

5           Regarding claims 7 and 23, La Porta and Khalil disclose the method of claim 5 and the network of claim 21. However, La Porta lacks what Khalil further discloses, "receiving the message by the node associated with the mobile node's current address (col. 5, lines 66-col. 6, lines 1-16 where if the mobile node maintains a list of correspondent nodes (regional care-of-addresses nodes), the mobile must have  
10   received this information from the correspondent nodes, and since all messages travel through the node associated with the mobile node's current address to the mobile node, so to must have the message containing information on all regional care-of-addresses)..."

          Khalil also lacks what La Porta further discloses, "...wherein the message is  
15   received by the node associated with the mobile node's current address via a hierarchy of routers (figure 2 shows a hierarchy or routers that the messages must traverse to get to the mobile)."

          It would have been obvious to one with ordinary skill in the art at the time of invention to include the receiving of messages at the current address node with the  
20   method of claim 5 and the network of claim 21 for the same reasons and motivation as in claims 5 and 21.

Regarding claims 8 and 24, La Porta and Khalil disclose the method of claim 5 and the network of claim 21. However, La Porta lacks what Khalil further discloses, "selecting, by the mobile node, a new regional care-of-address based upon information contained in the message (col. 6, lines 3-16 where it is stated that the mobile node  
5 changes (or selects) its address through the process of roaming which as seen in La Porta figure 2, means that the mobile must be selecting a new regional care-of-address because it will be roaming into a foreign domain)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the selecting of correspondent nodes with the method of claim 5 and the network of claim 21 for the  
10 same reasons and motivation as in claims 5 and 21.

Regarding claims 9 and 25, La Porta and Khalil disclose the method of claim 8 and the network of claim 24. However, La Porta lacks what Khalil further discloses, "the new regional care-of-address is selected based upon one of a distance of a node  
15 associated with the new regional care-of-address and the mobile node and a preference for the node associated with the new regional care-of-address (col. 5, lines 66-col. 6, lines 1-16 where, as in claims 8 and 24, the mobile selects a correspondent node based on a preference, for example the receipt of an ACK)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the selecting based on a  
20 preference with the method of claim 8 and the network of claim 24 for the same reasons and motivation as in claim 8 and 24.

Regarding claims 10 and 26, La Porta and Khalil disclose the method of claim 9 and the network of claim 25. However, La Porta lacks what Khalil further discloses, "the preference for the node associated with the new regional care-of-address is based upon one of network loading, network failures and local network policies (col. 5, lines 66-col. 6, lines 1-16 where again, as in claims 8 and 24, the selection can be based on the receipt of an ACK, and, as is known in the art, a non-receipt of an ACK indicates a generic type of network failure)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the preference based on a network failure with the method of claim 9 and the network of claim 25 for the same reasons and motivation as claims 9 and 25.

Regarding claims 12 and 28, La Porta discloses the method of claim 1 and the network of claim 17. However, La Porta lacks what Khalil discloses, "sending an update message from the mobile node to the node associated with the mobile node's regional care-of-address (col. 5, lines 66-col. 6, lines 1-16 where the update message is the list of correspondent nodes), wherein the update message includes an address associated with a node which the mobile node will be using as its new regional care-of-address (col. 5, lines 66-col. 6, lines 1-16 the mobile node's message contains information about updating its regional care-of-address with correspondent nodes it is in communication with)..."

La Porta further discloses what was already claimed in claims 1 and 17, "receiving packets by the node associated with the mobile node's regional care-of-

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address (although La Porta does not explicitly disclose receiving packets at the node associated with the regional care-of-address, it is strongly suggested that this must have happened due to the fact that the home domain knows to tunnel data from the correspondent node (or any other node communicating with the mobile) to the mobile);

5 and forwarding the received packets to the node associated with the mobile node's current address and to the node associated with the mobile node's new regional care-of-address (col. 10, lines 1-15)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the sending of an update message and receiving of packets at the  
10 node associated with the regional care-of-address for the purpose of correctly routing data to the mobile node in the foreign domain. The motivation for doing this is that a mobile has the opportunity to travel into a foreign domain and still receive data.

Regarding claims 13 and 29, La Porta discloses the method of claim 12 and the  
15 network of claim 28. However, La Porta lacks what Khalil discloses, "the update message is a binding update (col. 6, lines 3-10) and wherein the binding update includes an indication that the mobile node is registering with the node associated with the mobile node's new regional care-of-address (col. 6, lines 3-10 where the ACK to the binding update signifies that the correspondent node understands the new address of  
20 the mobile), that the mobile node requires bi-casting of packets." It would have been obvious to one with ordinary skill in the art at the time of invention to include the binding update with the method of claim 12 and the network of claim 28 for the purpose of

forwarding data between the mobile and correspondent nodes. The motivation for this is faster communication, or route optimization.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta  
5 et al. in view applicant's admitted prior art (AAPA).

Regarding claim 11, La Porta discloses the method of claim 1. However, La  
Porta lacks what AAPA discloses, "the packets are sent from the node communicating  
with the mobile node to the mobile node without being routed by a home agent  
associated with the mobile node (specification, page 4, lines 8-10)." It would have been  
10 obvious to one with ordinary skill in the art at the time of invention to have the packets  
not routed through the home agent for the purpose of allowing the packets to be  
delivered faster. The motivation for faster delivery of packets is to improve on efficiency  
of packet delivery and processing.

15 Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta  
et al. and Khalil et al. as applied to claim 21 above, and further in view of applicant's  
admitted prior art (AAPA).

Regarding claim 27, La Porta discloses the network of claim 21. However, La  
Porta lacks what AAPA discloses, "the packets are sent from the node communicating  
20 with the mobile node to the mobile node without being routed by a home agent  
associated with the mobile node (specification, page 4, lines 8-10)." It would have been  
obvious to one with ordinary skill in the art at the time of invention to have the packets

not routed through the home agent for the purpose of allowing the packets to be delivered faster. The motivation for faster delivery of packets is to improve on efficiency of packet delivery and processing.

5

***Allowable Subject Matter***

Claims 14-16 and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10

***Response to Arguments***

Applicant's arguments, see REMARKS/ARGUMENTS, page 9, section 2, paragraph 1, filed 6 October 2004, with respect to the 35 U.S.C. 112, second paragraph rejection of claim 13 have been fully considered and are persuasive. The 35 U.S.C. 112, second paragraph rejection of claim 13 has been withdrawn.

15

Applicant's arguments, see REMARKS/ARGUMENTS, page 9, section 2, paragraphs 2 and 3, filed 6 October 2004, with respect to the 35 U.S.C. 112, second paragraph rejection of claims 14-16 have been fully considered and although not persuasive, they will be withdrawn in light of the suggested changes above in the *Claim*

20

*Objections* section.

Applicant's arguments with respect to claims 1-3 and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 6 October 2004 have been fully considered but they  
5 are not persuasive.

Applicant argues for claims 4, 11, 20, and 27, La Porta teaches away from the claimed invention disclosing a system that uses IPv4 and that since La Porta discloses the Home Agent within the root node, La Porta is not compatible with the claimed invention. The examiner respectfully disagrees.

10 Although La Porta's invention deals mainly with the use of IPv4, La Porta does strongly suggest that his invention will be fully compatible with IPv6 (col. 9, lines 11-15). Therefore, it would have been obvious to one of ordinary skill in the art to see that La Porta fully allows for his invention to comply with IPv6.

Second, La Porta's invention does show the HA together with the root node as  
15 seen in figure 2 of La Porta and if this were the only physical placement of the HA, according to La Porta, then La Porta would not read on applicant's invention. However, La Porta fully accounts for the possibility that the HA can be located somewhere else besides the root node and it is not necessary for the HA to be located at the root node (col. 7, lines 39-43). Therefore, La Porta fully reads on applicant's claimed invention.

20

Applicant's arguments with respect to claim 5 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

5 § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not  
10 mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (571) 272-3070. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
20 supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

- 5 For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joshua Kading  
Examiner  
Art Unit 2661

10 January 27, 2005



**BOB PHUNKULH**  
**PRIMARY EXAMINER**